

I N F O R M A T I O N C O N T R O L S Y S T E M S , I N C .

Phone: 313 761-1600
Computer: 810 223-6055

424 West Washington
Ann Arbor, Michigan

March 1967

Gentlemen:

We appreciate your interest in our PDP 5/8/8-S proprietary software as described in Datamation, January 1967. Enclosed are brief bulletins to help you decide whether to request further details from us. Specifically, I will gladly send user's manuals so that you may better access the value of these products.

It is also worth mention that ICS can imbed these languages into an operating system which will broaden your hardware and software capabilities. Such an operating system could contain a library search and write package, a tape/core dump procedure, automatic swapping between core and mass storage, and a fully buffered I/O supervisor to handle monitor and control interrupts.

I feel that the addition of these languages to your PDP-5/8/8-S system will provide highly increased flexibility and consequent utilization of your hardware investment.

Sincerely,



Edward Walter
Senior Systems Analyst

E
W: slks

Enclosures

IL-8

IL-8 is an extremely powerful interpretive assembly language for the PDP-5/8/8-S. Some of its features are:

1. Automatic Paging

The IL-8 programmer can directly address every location.

2. Multiple Precision

All constants and literals can be defined as 12, 24, or 36 bit constants.

For example, the instruction 2GFA A B C would cause a jump to C if A (a 24 bit number) were not greater than B (a 24 bit number) and otherwise would continue.

3. Block Simplified I/O

I/O instructions are designed to read blocks of characters. For example,

LSR A n (reads n characters from the low speed reader into locations A, A+1, ... , A+n-1)

HSR A n (reads n characters from the high speed number into locations A, A+1, ... , A+n-1)

4. Index Registers

Certain instructions allow indirection by the use of index registers.

5. Predictable Running Time

The number of machine cycles required for each instruction is predictable and included in the IL-8 user's manual.

We feel that the 70 powerful instructions which make up IL-8 offer the PDP-5/8/8-S programmer far greater problem solving capability than he now has.

ALICS

The new Assembly Language by Information Control Systems (ALICS) has been designed to increase programmer productivity for both the experienced PDP-5/8 programmer and those first learning to use the machines. This has been done without sacrificing either the speed of the resultant program or the translation time required. You can convince yourself of ALICS' worth by considering some of its primary features.

1. Automatic Page Turning

The ALICS programmer treats every location as directly addressable. ALICS automatically recognizes where a symbolic location is relative to the current page and generates all necessary direct or indirect references.

2. One Pass Assembly

ALICS generally requires a single loading of the symbolic input tape to provide ALICS binary code. This reduces translation time over a two pass assembler such as PAL by a factor of up to one-third.

3. Automatic Relocation Capability

At execution time ALICS programs are automatically relocated to any free locations. This makes it practical to develop a package of general purpose subroutines which can be included in any program. ICS plans to make available such a package. Users of our general purpose subroutines have found programming time reduced as much as fifty percent.

4. Custom Capability

Versions of ALICS will be available to take advantage of optional peripheral equipment such as DECTapes, card readers, etc.

We sincerely feel that ALICS will greatly increase the worth of your PDP-5/8/8-S at a small fraction of its cost.

FORTTRAN

ICS FORTRAN II finally bridges the gap between the small computer and a powerful compiler. Outstanding characteristics of ICS FORTRAN II include:

1. Compiled Object Code

By producing binary object code all programs can be debugged at the object level. This means that programs can be single stepped through real binary code and patched without recompilation. Also, the absence of an interpretive operating system allows larger programs.

2. Relocatable Object Code

General purpose subroutines can be compiled, loaded and automatically linked without assigning page breaks or origins. Much of what in the past made up an operating system, (SIN, COS, EXP, I/Ø, etc.) are general purpose library routines which are loaded only if needed. This, again, allows significantly larger programs.

3. Standards

No special restrictions have been introduced into ICS FORTRAN II. The syntax is compatible with many of the existing FORTRAN II compilers (e.g., # J 28-6197 IBM 7094). It is now possible to debug programs on the PDP-5/8/8-S for subsequent production runs on larger computers (7094, 1107, etc.)

4. Extended Error Diagnostics

An emphasis has been put on clear, concise and complete error comments.

5. Customer Capability

ICS FORTRAN II can be implemented for almost any hardware I/Ø configuration. We can also imbed FORTRAN in your present operating system or develop one for you.

6. Intermediate ALICS Assembly Code

Since the FORTRAN II translator produces intermediate ALICS II code it is possible to optimize any code produced at the assembly level. Also assembler-compiler compatibility allows the automatic linking of assembled and compiled subroutines.